

AP

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Appln. Of: SCHMIEDING et al.

Serial No.: 10/635,174

Filed: August 6, 2003

For: USB TYPE PLUG CONNECTOR

Group: 2833

Examiner: Hammond, Brigitte R.

DOCKET: PRINZ H1797

MAIL STOP APPEAL BRIEF - PATENTS

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

**TRANSMITTAL LETTER**

Dear Sir:

In connection with the above-entitled matter, enclosed please find the following:

1. Three copies of Appellants' Brief on Appeal with Appendix A; and
2. Credit Card Payment Authorization Form PTO-2038 in the amount of \$500.00 to cover the cost of filing the Appeal Brief.

In the event there are any fee deficiencies or additional fees are payable, please charge them (or credit any overpayment) to our Deposit Account No. 08-1391.

Respectfully submitted,

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**APPELLANTS' BRIEF ON APPEAL**

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## **APPENDIX A**

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**APPELLANTS' BRIEF ON APPEAL**

This Brief is being filed in support of Appellants' Appeal from the Final Rejection by the Examiner to the Board of Appeals and Interferences. The Notice of Appeal, along with the prescribed fee, was timely filed under Certificate of Mailing on July 8, 2005.

**REAL PARTY IN INTEREST**

The Real Party in Interest in this Appeal is Harting Electric GmbH & Co. KG, a German corporation having its principal place of business at Wilhelm-Hartung-Strasse 1, Espelkamp, Fed. Rep. Germany 32339. The Application has been assigned to Harting Electric GmbH & Co. KG by the inventors Dirk Schmieding and Christa Wellmann, and the Assignment recorded in the U.S. Patent and Trademark Office on August 6, 2003 at Reel 014400, Frame 0747.

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### RELATED APPEALS AND INTERFERENCES

To the best of the knowledge of the undersigned attorney and Appellants, there are no other appeals or interferences that would directly affect, or be directly affected by, or have a bearing on, the Board's decision in the present Appeal.

### STATUS OF THE CLAIMS

Claims 2-11 are pending in this Application. Claim 1 has been cancelled. Claims 2, 8, 10 and 11 stand finally rejected and are on Appeal. Claim 9 has been allowed, and claims 3-7 have been objected to as being dependent on a rejected base claim, but have been indicated to be allowable if rewritten in independent form. The Claims on Appeal are set forth in Appendix A attached hereto.

### STATUS OF AMENDMENTS

The last amendment entered in this application is Amendment B under Rule 116 (remarks only) filed June 8, 2005. Amendment B was entered but deemed not to place the Application in order for allowance.

### SUMMARY OF CLAIMED SUBJECT MATTER

The present invention relates to plug connectors, which can be used for a variety of tasks such as transmitting electrical power or data signals. More particularly, the present invention provides a plug connector having a housing 12 defining a chamber 16 divided by a support plate 18. On one side of the support plate may be a contact such as a socket 20 shown in Fig. 1. On the other side of the plate is a second contact formed by two, oppositely opposed USB couplings 22 as shown in Fig. 3. (Specification, page 3, lines 10-16). The two USB couplings 22 are electrically connected to each other by a raised spring element 26, as shown in Fig. 2 (Specification, page 3, lines 19-21). The spring element 26 is pressed against the shields

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24 of the USB couplings by an insulating body 28 as shown in Fig. 2 (Specification, page 3, lines 24-25). The entire assembly is placed into housing 12 and fixed by a fixing screw 34 as seen in Fig. 1 (Specification, page 4, lines 1-9).

Independent claim 2 is directed to a plug connector comprising a housing 12 having a chamber 16 with a support plate 18 arranged in the chamber and dividing the chamber into first and second sections. A first type of contact, such as a socket insert 20 is arranged in the first section, and two USB couplings 24 facing away from each other are arranged in the second section.

Independent claim 10 is similar to independent claim 2 and is directed to a plug connector comprising a housing 12 having a chamber 16 with a support plate 18 arranged in the chamber and dividing the chamber into first and second sections. A first type of contact such as a socket insert 20 is arranged in the first section, and a second type of contact in the form of a USB coupling 22 is arranged in the second section. In the claim 10 embodiment, the support plate 18 also doubles as a circuit board.

#### GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. Whether claims 2-8, and 10 are obvious under 35 U.S.C. § 103(a) over Yi (U.S. Patent No. 6,296,534) in view of Shiu (U.S. Patent No. 5,961,350).
2. Whether claim 11 is obvious under 35 U.S.C. § 103(a) over Yi and Shiu and further in view of Capper et al. (U.S. Patent No. 5,513,075).

#### ARGUMENTS

##### **I. BRIEF DISCUSSION OF THE APPLIED ART**

Before considering the specific art rejections, a brief discussion of the applied art may be helpful to the Board.

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**Yi, U.S. Patent No. 6,296,534 B1 ("Yi")**

Yi teaches an electrical connector assembly with two electrical connectors mounted onto a single adapter plate and located on opposite sides of the adapter plate. The electrical connectors and the adapter plate are completely encapsulated in a non-conducting material by way of injection molding.

**Shiu, U.S. Patent No. 5,961,350 ("Shiu")**

Shiu teaches a side-by-side arrangement of shielded connectors. (Abstract) The side-by-side arrangement can be seen in Fig. 1. The assembly is placed within an insulative housing that is designed to connect to a circuit board via solder tails and mounting holes. (Column 2, lines 18-40) The connectors placed in the assembly may include USB receptacles. (See Fig. 1)

**Capper et al., U.S. Patent No. 5,513,075 ("Capper")**

Capper teaches a connector module designed to be mounted and sealed onto a mounting surface. (Abstract) The connector provides a termination to ends of wires and simultaneously seals the terminations. (Column 4, lines 57-61) The connector includes a housing 102 and mounting flange 108 designed to provide an environmental seal. (Column 7, lines 33-54; See Fig. 9)

**II. THE REJECTION OF CLAIMS 2-8, AND 10 UNDER  
35 U.S.C. § 103(a) AS OBVIOUS OVER YI IN VIEW OF  
SHIU IS IN ERROR.**

***A. Yi in View of Shiu Does Not Teach Every Element Of Independent Claims 2 and 10.***

Independent claims 2 and 10 both require "a plug connector comprising a housing including an accommodation chamber, and a support plate which is arranged in said accommodation chamber and divides the latter in first and second sections, a first type of

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contact in said first section and a second type of contact arranged in said second section, said second type of contact being a USB coupling." Independent claim 2 also requires two USB couplings in the second section "mounted to said support plate so as to face away from each other".

The Examiner posits that the primary reference Yi teaches every element of independent claims 2 and 10 except the use of USB couplings. More particularly, the Examiner takes the position that the primary reference Yi shows an housing 30 having an accommodation chamber (no number) which is divided by support plate 16 into a first and second section (Final Action, page 2). The Examiner is wrong. In Yi the adapter 16 and the electrical connectors 12 and 14 are completely enclosed by injection molding in a non-conductive enclosure material (Column 4, lines 58-64). Thus, in Yi the non-conductive material completely encapsulates the adapter and connectors in a protective overlay with the dimensions 30 shown in FIG. 8. Thus, Yi doesn't teach a housing with an accommodation chamber. Shiu does not provide the missing teachings. Shiu only teaches connectors and an associated mounting board.

Furthermore, the primary reference, Yi, teaches a plug with two similar electrical connectors 12 and 14. (See Figs. 1-7, column 2, lines 65-67 and column 3, lines 12-13: "The second connector 14 has a structure similar to that of the first connector..."). By contrast, independent claim 2 requires first and second types of contacts including a first type of contact and two USB couplings, while independent claim 10 requires first and second types of contacts in which the second type of contact is a USB coupling. Shiu does not supply the missing teachings. Shiu teaches two side-by-side USB connectors on a board. Shiu does not teach a

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connector with two types of contacts which the second type is a USB coupling as required by claim 10, or two USB couplings mounted facing away from one another as required by claim 2.

Moreover, the Examiner fails to explain why one skilled in the art would be motivated to combine Yi and Shiu, or how Yi's two plug connector and Shui's two plug connector could be combined to form the three contact connector of claim 2 including two USB plugs which "face away from each other," or a two contact connector comprising first and second different types of contacts as required by claim 10. Thus, it is clear that the Examiner has engaged in impermissible hindsight reconstruction of Appellant's invention. As this Board has observed on numerous occasions, the initial burden of establishing a basis for denying patentability to a claimed invention rests upon the Examiner. In re Paisecki, 745 F.2d 1468, 223 U.S.P.Q. 785 (Fed. Cir. 1984). The Examiner may not, because of doubt that the invention is patentable, resort to speculation, unfounded assumption or hindsight reconstruction to supply deficiencies in the factual basis. See In re Warner, 379 F.2d 1011, 1154 U.S.P.Q. 173 (CCPA 1967).

Furthermore, in order for a combination of prior art to prima facie render obvious Appellants' claimed invention (1) the asserted combination of prior art must provide all of the limitations of Appellants' claimed invention, and (2) the asserted prior art must provide some motivation to one skilled in the art to selectively combine them so as to achieve the claimed invention. In re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). None of the applied prior art in this case, whether taken singly or in any combination can be said to satisfy either prong of the In re Fine test.

Accordingly, Yi and Shiu whether taken independently or in combination do not teach or suggest independent claim 2 or independent claim 10. Claims 3-8 depend directly or

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indirectly on claim 2 and are therefore patentable for the reasons stated above as well as for their own additional limitations.

***B. Combining Yi with Shiu Would Render Yi Non-Functional.***

The Federal Circuit has stated that if a proposed modification to a prior art invention makes it unsatisfactory for its intended purpose, then there can be no suggestion or motivation to make the proposed modification. In re Gordon, 733 F.2d 900, 221 U.S.P.Q. 1125 (Fed Cir. 1984). See also MPEP 2143.01.

In the instant case, modifying Yi with the teachings of Shiu as suggested by the Examiner would render Yi's adapter inoperable. Fig. 8 of Yi shows the two mounted connectors as well as a dotted line 30 signifying the edge of the injection molding, non-conductive enclosure. The connectors in Yi are mounted by through-hole soldering wherein the connectors point upward and away from the mounting plate. The Examiner states without explanation or support that it would have been obvious to substitute the video connectors (DVI and VGA) taught by Yi with USB connections. To the contrary, mounting the USB connection of Shiu in the configuration of Yi would result in connectors arranged at 90° to the surface rather than at 180° degrees as in Figs. 1-8. This would require changing both the orientation of the mounting plate, and the shape of the insulating enclosure. In fact, Yi demonstrates in Figs. 8-10 that the configuration of the direction of the connectors and the shape of the insulating enclosure is critical to the operation of his device. Accordingly, the rejection of claims 2-8, and 10 is in error.

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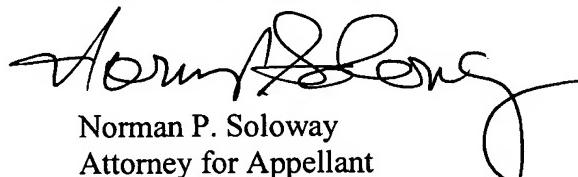
**III. THE REJECTION OF CLAIM 11 UNDER 35 U.S.C. §  
103(a) AS OBVIOUS OVER YI IN VIEW OF SHIU, AND  
FURTHER IN VIEW OF CAPPER IS IN ERROR.**

Claim 11 depends directly on claim 2. The deficiencies of Yi and Shiu, vis-à-vis Appellants' claim 2, are discussed above. Capper does not provide the missing teachings to Yi and Shiu. Capper has been cited as teaching a connector housing having a mounting flange (Final Action at page 3), and is acknowledged as so teaching. However, Capper does not teach a plug connector including first and second different types of contacts including two USB couplings mounted facing away from one another, enclosed in a housing with an accommodation chamber as required by claim 2. Rather Capper teaches a connector have at least one electrical terminal adapted to form a simultaneous electrical connection between each terminal and a circuit (Abstract). Thus, no combination of Yi, Shiu, and Capper can achieve nor render obvious claim 11, and the rejection of claim 11 as obvious from Yi and Shiu and further in view of Capper likewise is in error.

**CONCLUSION**

In view of the foregoing, it is respectfully requested that the Rejection of the subject Application be reversed in all respects.

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**APPENDIX A**

**CLAIMS ON APPEAL**

**Claim 1 (cancelled)**

**Claim 2:** A plug connector comprising a housing including an accommodation chamber, and a support plate which is arranged in said accommodation chamber and divides the latter in first and second sections, a first type of contact being arranged in said first section and a second type of contact being arranged in said second section, said second type of contact being a USB coupling, wherein two USB couplings are provided which are mounted to said support plate so as to face away from each other.

**Claim 3:** The plug connector according to Claim 2, wherein said USB couplings are surrounded by one shield each, a spring element being provided which connects said shields with each other.

**Claim 4:** The plug connector according to Claim 3, wherein said two USB couplings are surrounded by an insulating body which is fastened to said support plate by two solder-in clips.

**Claim 5:** The plug connector according to Claim 4, wherein said insulating body is provided with a cut-out, said spring element projecting through said cut-out and resting against said housing.

**Claim 6:** The plug connector according to Claim 5, wherein said spring element is provided with a raised middle section projecting through said cut-out towards outside.

**Claim 7:** The plug connector according to Claim 6, wherein said middle section is provided with several contact tabs which are bent off at an angle such that they touch said housing with a sharp edge.

**Claim 8:** The plug connector according to Claim 2, wherein said first type of contact is a socket insert.

**Claim 9 (Allowed):** A plug connector comprising a housing including an accommodation chamber, and a support plate which is arranged in said accommodation chamber and divides the latter in first and second sections, a first type of contact being arranged in said first section and a second type of contact being arranged in said second section, said second type of contact being a USB coupling, wherein said support plate is freely placed in said accommodation chamber and indirectly secured by a fixing screw which extends through said housing into engagement with said first type of contact mounted to said support plate.

**Claim 10:** A plug connector comprising a housing including an accommodation chamber, and a support plate which is arranged in said accommodation chamber and divides the latter in first and second sections, a first type of contact being arranged in said first section and a second type of contact being arranged in said second section, said second type of contact being a USB coupling, wherein said support plate is a circuit board.

**Claim 11:** The plug connector according to Claim 2, wherein said housing has a mounting flange.

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